

Sources: amsat-ans-2019-ans-300-weekly-hyperkitty-f24d1eae76.txt

ANS - 300

AMSAT wants to see Amateur Radio in every CubeSat, and it's part-

nering with non-Amateur Radio partners to make that happen. In the "Apogee View" editorial for the September/October issue of The AMSAT Journal, Executive Vice President Paul Stoetzer, N8HM, wrote, "[W]e continue to support a stream of LEO satellites. RadFxSat-2/Fox-1E is ready for launch no earlier than December 1, 2019, on the ELaNa XX mission. The linear transponder and telemetry system carried aboard Fox-1E was designed for use in different CubeSats by merely adding an interface adapter for connection to the host bus."

Stoetzer said CubeSat programs interested in launching an Amateur Radio payload may partner with AMSAT to carry a Fox-1E module on their spacecraft. "By providing Amateur Radio capability, the CubeSat program gets a worldwide ground station network to receive their telemetry and experiment data while the Amateur Radio community gets a transponder to use in orbit," he pointed out.

Stoetzer said the first such partnership will be with the Husky Satellite Lab at the University of Washington. Its 3U CubeSat -- HuskySat-1 -- is set to launch on the ELaNa XXV mission from Wallops Island, Virginia, no sooner than November 2. A Northrop Grumman Cygnus spacecraft will carry HuskySat-1 to the International Space Station, and after completing its mission there, Cygnus will continue to an orbit of approximately 500 kilometers (310 miles) to deploy HuskySat-1. "After a 30-day mission to complete tests of its experimental payloads -- a pulsed plasma thruster, and a K-band (24 GHz) communications system -- the satellite will be turned over to AMSAT, and the linear transponder will be made available to the Amateur Radio community," Stoetzer said.

Ed. Note - HuskySat-1 will carry a 30 kHz wide 145 to 435 MHz linear transponder for amateur radio SSB/CW communications along with 1k2 BPSK telemetry. The IARU has coordinated a downlink on 436.810-435.840 MHz and uplink on 145.910-145.940 MHz. NASA TV (<http://www.nasa.gov/ntv>) will provide coverage of the launch. Pre-launch details are posted at: <https://tinyurl.com/ANS-300-Cygnus-Launch-Nov2>

[ANS thanks AMSAT and the ARRL for the above information]

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The 2019 AMSAT Symposium Proceedings USB flash drives, featuring 1.98 GB of information, including the 2019 Proceedings and all previously published Proceedings dating back to 1986 are now available on the AMSAT store <https://tinyurl.com/ANS-300-Symposium-Flash-Drive> (allow 10 business days for the next batch to be loaded with the files)

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AMSAT VP User Services Describes Planning for Improvements

At the conclusion of the 2019 AMSAT Symposium and Annual General meeting, Robert Bankston, KE4AL, VP User Services provided a statement outlining his plans. Robert's statement follows:

I am so honored to be elected by the AMSAT Board of Directors to be the AMSAT Treasurer and reelected to be the AMSAT Vice-President of User Services, as well as reappointed as the Director of AMSAT Ambassadors by the AMSAT President. Thank you for your confidence in me. I am humbled. This is a lot of hats to wear, along with my full-time job, but I look forward to the challenge. I believe in AMSAT's mission and have a wonderful team of volunteers to assist me.

I am excited to announce that there are major improvements coming for our AMSAT members in the near future. The AMSAT Board of Directors approved my recommendations for an internet-based, member management system, the transition to a digitally delivered, full-color AMSAT Journal, and a complete overhaul of our AMSAT website. I have been putting together these proposals for several months and thank the Board of Directors for the permission to move these projects forward. These improvements will modernize how AMSAT serves you. I hope that you will be as impressed with them as I am.

The member management system puts you in control of your membership account, allowing you to update your contact information, pay your dues, and register for events in real time. In addition, the program will automatically push out reminders, newsletters, and a digital copy of the AMSAT Journal.

Transitioning to a digitally-delivered, AMSAT Journal will allow us to provide a full-color magazine, without raising the cost of membership. In addition, we will have the opportunity to provide member-only content on our website, to include back issues of our AMSAT Journal.

Lastly, we will be working on a complete overhaul of our AMSAT website. Over the years, our website has received several facelifts, and, in the process, it has become somewhat disjointed. Our goal is to make the navigation more intuitive and offer the content you deserve. The front of the website will focus on external visitors, explaining who we are, what we do, and what we have to offer. We will also have portals for our members and friends in the AMSAT community, how to guides on getting started in amateur radio satellites, and all the important information about current satellites you will need to work them.

AMSAT's User Services is committed to serving AMSAT members and the AMSAT community and to deliver the quality services you deserve as we move forward into the next 50 years of Keeping Amateur Radio in Space! If you would like to join us on this incredible journey, we could sure use your help.

73,

Robert Bankston, KE4AL
Vice-President, User Services
Director, AMSAT Ambassadors
Treasurer
Radio Amateur Satellite Corporation (AMSAT)

[Ed. note - The AMSAT News Service is a proud member of the AMSAT User Services Team]

[ANS thanks Robert Bankston, KE4AL, AMSAT's Man of Many Hats for the above information]

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Need new satellite antennas? Purchase Arrows, Alaskan Arrows, and M2 LEO-Packs from the AMSAT Store. When you purchase through AMSAT, a portion of the proceeds goes towards Keeping Amateur Radio in Space.
<https://amsat.org/product-category/hardware/>

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AMSAT-DL Symposium and JHV 2019 November 9 - November 10

AMSAT-DL extends an invitation to the Satellite Symposium and General Assembly of AMSAT Deutschland e.V. in Bochum, Germany. Lectures on current amateur radio satellites and space projects will be presented.

The lecture program and symposium schedule have been posted. Landing coordinates have been posted as 07° 11' 39" E 51° 25' 40" N.

See <https://amsat-dl.org/en/event/amsat-dl-symposium-und-jhv-2019/> for the latest information and travel directions.

[ANS thanks AMSAT-DL for the above information]

Reminder - ARISS Proposal Window is Open Until November 30, 2019

The Amateur Radio on the International Space Station (ARISS) Program is seeking formal and informal education institutions and organizations, individually or working together, to host an Amateur Radio contact with a crew member on board the ISS. ARISS anticipates that the contact would be held between July 1, 2020 and December 31, 2020. Crew scheduling and ISS orbits will determine the exact contact dates. To maximize these radio contact opportunities, ARISS is looking for organizations that will draw large numbers of participants and integrate the contact into a well-developed education plan.

The deadline to submit a proposal is November 30, 2019. Proposal information and documents can be found at <https://www.ariss.org/>

[ANS thanks ARISS for the above information]

ARISS Activities & Upcoming ARISS Contact Schedule

- + Liceo Scientifico Teresa Gullace, Rome, Italy, direct via IZ0DIB and I.S.I.S. "Zaccagna - Galilei" sede "G. Galilei", Carrara. Italy, direct via IQ5VR Thu 2019-10-24 11:13 UTC
Contact was successful.
- + I.I.S. "Ciampini-Boccardo", Novi Ligure, Italy, direct via I1LJV and I.T.I.S. "Magistri Cumacini", Como, Italy, direct via IZ2MCC
Fri 2019-10-25 10:24 UTC Contact was successful.
- + Golden Oak Montessori, Castro Valley, CA, telebridge via K6DUE.
The ISS callsign is presently scheduled to be NA1SS
The scheduled astronaut is Drew Morgan KI5AAA
Contact is go for: Mon 2019-10-28 15:50 UTC
- + Young Scientists Program at USC and Vermont Elementary School, Los Angeles, CA, direct via KN6CHS.
The ISS callsign is presently scheduled to be NA1SS
The scheduled astronaut is Luca Parmitano KF5KDP
Contact is go for: Mon 2019-10-28 18:57 UTC
- + Farmwell Station Middle School Space Dreamers, Ashburn, VA, direct via K4LRG.
The ISS callsign is presently scheduled to be NA1SS
The scheduled astronaut is Drew Morgan KI5AAA
Contact is go for: Tue 2019-10-29 15:01 UTC

The ARISS webpage is at <https://www.ariss.org/>
Note that there are links to other ARISS websites from this site.
The main page for Applying to Host a Scheduled Contact may be

found at: <https://www.ariss.org/apply-to-host-an-ariss-contact.html>

AMSAT and ARISS are currently supporting a FundRazr campaign to raise \$150,000 for critical radio infrastructure upgrades on ISS. These upgrades are necessary to enable students to continue to talk to astronauts in space via Amateur Radio. We have reached a great milestone with \$33,830 raised or about 23% towards our goal. This would not have been possible without your outstanding generosity!! For more information and to DONATE TODAY visit:

https://fundrazr.com/arissnextgen?ref=ab_e7Htwa_ab_47IcJ9

[ANS thanks ARISS for the above information]

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AMSAT, along with our ARISS partners, is developing an amateur radio package, including two-way communication capability, to be carried on-board Gateway in lunar orbit.
Support AMSAT's projects today at <https://www.amsat.org/donate/>

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Software Update for UZ7H0's Software Packet-Radio TNC

Andrei, UZ7H0, the developer of the UZ7H0 Soundmodem software, has released an updated version: soundmodem105.

The UZ7H0 soundmodem is a dual-port Packet-Radio TNC that uses a soundcard as a modem and supports the AX.25 protocol on computers running the Windows XP, Vista, 7, 8, 10 operating systems.

The newest version of Soundmodem supports these packet protocols:

- + AFSK 300, 600, 1200, 2400 bps (conventional packet)
- + BPSK 300, 600, 1200, 2400 bps
- + QPSK 2400, 3600, 4800 bps
- + 8PSK 4800 bps

The updated software and documentation can be accessed at:
<http://uz7.ho.ua/packetradio.htm> - and look for -

- + soundmodem105.zip 13-Oct-19 03:57
- + CHANGELOG.txt 13-Oct-19 04:36

High-speed packet software supporting the telemetry from amateur and scientific satellites, called hs_soundmodem21.zip can also be downloaded from this site.

High-Speed Soundmodem:

- + G3RUH 4800, 9600, 19200 bps
- + Manchester 1200, 2400, 3600, 7200 bps
- + HAPN 4800 bps
- + GOMX-1/3, Mobitex-NX (BeeSAT-2/4), AAUSAT-4, LilacSat-2 decoders

[ANS thanks Andrei, UZ7H0, for the above information]

Upcoming Satellite Operations

[Ed. note - Twitter URLs can be accessed with your web browser even if you do not have a personal Twitter account.]

Operating Shorts:

- + Oct 24-28, KQ2RP/1: FN54 (and possibly the FN44/54 line); FM only

- + St. Lucia, October 19-28, 2019
 Jay, AA4FL, will be in St. Lucia for the J68MD CQWW SSB Contest Team. He will be doing OSCAR satellite operation as J6/AA4FL, by schedule as he is visiting vacation style in varying locations. His schedule will depend on shifts as a team member of the CQWW J68MD team. E-mail per QRZ to coordinate both FM simple SATs and SSB linear transponder bird QSO schedules. Radios will be a FT-817ND and FT-818ND for full duplex operation using an Arrow II antenna.

- + Minnesota's North Shore (EN36/EN46, EN47/EN48, EN57/EN58)
 October 30 to November 1, 2019.
 Mitch, AD0HJ, will be taking a tour of Minnesota's North Shore before the BIG SNOW comes down. It all kicks off with the Oct 30 06:35z CAS-4B pass from EN57/58 grid line and ends on the Nov 1 11:27z S0-50 pass from EN36/46 line. In between, Mitch will hit the EN47/48 grid line. 24 FM and Linear passes in all. Definitely something for everyone. Keep and eye on Mitch's Twitter feed for further updates: <https://twitter.com/AD0HJ>

- + South TX (EL0x and EL1x) November 2-9, 2019
 Ron, AD0DX, will be vacationing in McAllen TX area the week of Nov 2 to 9. He will be roving to south Texas on the above dates. His current plan is as follows: Sat Nov 2nd: EL08/EL09 probably one pass per grid starting in the late afternoon local Sun Nov 3: EL17/EL18 holiday style, one or two passes per grid Mon Nov 4 through Fri Nov 8: EL06 / EL15 / EL16. He is staying in EL06 and will activate 15 and 16 a few times throughout the week. Will probably activate EL06 4 or 5 times. Sat Nov 9: EL07 / EL08 Probably one pass from each grid. He will be active on FM and linear satellites and will tweet passes from <https://twitter.com/ad0dx>

- + EM68/69 November 3-5, 2019
 Tanner, W9TWJ, will be vacationing in Illinois, November 3-5. Key word is vacation, but he will jump over to activate the EM68/EM69 gridline on FM satellites. Watch Tanner's Twitter feed for further announcements: <https://twitter.com/twjones85>

- + Nunavut, Canada (ER60) November 11 - December 6, 2019
 Look for VY0ERC to once again be active from the Eureka Weather station (NA-008, Zone 2) between Nov. 11 to Dec. 6. This station is operated by the Eureka Amateur Radio Club [probably the most northerly located amateur radio club in the world] from Eureka, Nunavut. The suggested bands are 40 and 20 meters (possibly 80m), as well as FM satellites (from ER60, EQ79) using SSB, the Digital modes and very slow CW. Activity will be limited to their spare time. QSL via M00X0, OQRS or direct. For updates, see: <https://twitter.com/vy0erc>

- + EA9 Melilla (IM85) November 18-21, 2019
 Philippe, EA4NF, will be operating from Melilla as EA9/EA4NF from November 18 to 21, 2019. This very small Spanish territory located in Northern Africa, which is a very rare GRID and is listed as one of the Most Wanted SAT DXCC. Updates and passes on Philippe's Twitter: https://twitter.com/EA4NF_SAT

- + Key West (EL94) December 3-6, 2019
 Tanner, W9TWJ, will be vacationing in Key West December 3-6. Key word is vacation, but he will jump on some FM satellite passes to activate EL94 for those that need it or just want to chat. Watch Tanner's Twitter feed for further announcements: <https://twitter.com/twjones85>

+ Hawaii (BK19, BK28, BK29, BL20) December 21-28, 2019

Alex, N7AGF, is heading back to Hawaii over Christmas. This will be a holiday-style activation, with special emphasis on the grid that got away – BK28. Keep an eye on Alex's Twitter feed for further announcements: <https://twitter.com/N7AGF>

Please submit any additions or corrections to ke4al (at) amsat.org

Just because the year is winding down and Winter is knocking on the door doesn't mean the satellite operations are slowing down. Check out AMSAT's Upcoming Satellite Operations pages for all the latest happenings:

<https://www.amsat.org/satellite-info/upcoming-satellite-operations/>
Announcements are posted as soon as they are received, so make sure you bookmark the page and check it often. If you have an activation in the works, please send me an email to make sure the word gets out.

[ANS Thanks Robert Bankston, KE4AL, for the above information]

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The digital download version of the 2019 edition of
Getting Started with Amateur Satellites is now available as a
DRM-free PDF from the AMSAT Store. Get yours today!
<https://tinyurl.com/ANS-237-Getting-Started>

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The AMSAT Hamfests & Conventions Web Page Updates

Information about AMSAT activities at important events around the country is posted on the AMSAT Hamfests & Conventions web page:

<https://www.amsat.org/other-events/>

Examples of these events are radio club meetings where AMSAT representatives give presentations, demonstrations of working amateur satellites, and hamfests with an AMSAT presence such as a table or booth with AMSAT literature and merchandise, sometimes also with presentations, forums, and/or demonstrations.

A copy of the AMSAT hamfest brochure is available for download from the page (above) - get the "AMSAT Intro Brochure", a color brochure that is designed to be printed double-sided and folded into a tri-fold handout. Contact Martha at the AMSAT Office if you need pre-printed copies.

To include your upcoming AMSAT presentation and/or demonstration, please send an email to ambassadors (at) amsat (dot) org.

[ANS thanks the AMSAT Ambassadors for the above information]

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The Fox-In-A-Box Raspberry Pi SD card for setting up a
Raspberry Pi-based telemetry station for the Fox-1 satellites
now supports the Raspberry Pi 4.
Get yours today on the AMSAT Store!
<https://amsat.org/product/fox-in-a-box-raspberry-pi-sd-card/>

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Satellite Shorts From All Over

- + NASA is inviting 50 social media users to witness the next SpaceX cargo launch to the Space Station. All details, requirements, and restrictions are posted at: <https://go.nasa.gov/2MGt27y>
Applications close Oct. 31.
- + To apply for a NASA Internship head over to <http://intern.nasa.gov> to see what's new! You can learn about about NASA Internships, Pathways, Fellowships, and International Internship opportunities! The application deadline for spring 2020 is November 5, 2019.
- + The presentation by Alan B. Johnston, PhD, KU2Y, AMSAT VP Educational Relations, and Pat Kilroy, N8PK, at the 37th Space Symposium "A Year with the AMSAT CubeSat Simulator: 12 Months in the Classroom and Lab" is available for download as a PDF file at <https://t.co/8ytonDXW5v>
View Alan's announcement on Twitter <https://t.co/0fiFiU56LM>
A PDF copy of Alan and Pat's PowerPoint slides for their presentation, "Updates to the AMSAT CubeSat Simulator: Fox Emulation Mode and Raspberry Pi Ground Station" can be downloaded from: <https://t.co/N4bjCVVBym?amp=1>
- + AMSAT Colloquium Talk on QO-100 is posted at:
<https://amsat-uk.org/2019/10/21/video-eshail-2-qo-100-talk/>
<https://youtu.be/hxxlCx3W5Bg>
Videos of the presentations given at the AMSAT-UK International Space Colloquium, which was held as part of the RSGB Convention in Milton Keynes, October 12-13, 2019, are being made available on YouTube. A recent release is the talk on the geostationary satellite Es'hail-2 / QO-100 activities of AMSAT-DL given by Achim Vollhardt, DH2VA, this is followed by the awarding of the RSGB Louis Varney Cup to Peter Gültzow DB20S.
- + The Microwave Update (MUD) 2019 Conference in the Dallas, TX area has wrapped up. Both the MUD proceedings and GNU Radio Workshop proceedings are available from Lulu.
<https://tinyurl.com/ANS-300-MUD-GNU-Proceedings>
- + AO-7 has been operating during a period of full illumination that will last until approximately December 2nd. During this time, the satellite's onboard timer should switch it between Mode A (145 MHz uplink / 29 MHz downlink) and Mode B (432 MHz uplink / 145 MHz downlink) every 24 hours. To check or report the satellite's current mode, please see the AMSAT Live OSCAR Satellite Status Page at: <https://www.amsat.org/status/> A description of AO-7 operation is posted at: <https://www.amsat.org/two-way-satellites/ao-7/>
- + NASA article highlights the role of amateur radio in letting young people speak directly with astronauts and cosmonauts on the International Space Station is posted at:
<https://tinyurl.com/ANS-300-NASA-Youth>
- + NASA Astronaut Cady Coleman, Jethro Tull's Ian Anderson Perform the First Space-Earth Duet. NASA Astronaut Cady Coleman, circling Earth aboard the International Space Station, and musician Ian Anderson, founder of the rock band Jethro Tull, joined together for the first space-Earth duet. See: <https://youtu.be/XeC4nqBB5BM>
- + Enjoy NASA's special video just in time for Halloween! Raining glass! Wicked wind! Radiation blasts from an undead star are all at play in our GALAXY OF HORRORS! A preview of the video is available in tweet from NASA:
<https://twitter.com/NASAExoplanets/status/1187768977079992320>
And it will be available for download Tuesday, Oct. 29, at:
<http://exoplanets.nasa.gov>

- + West Point cadets using the USMA amateur radio club callsign W2KGY had a contact with Col. Drew Morgan, U.S. Military Academy Class of 1998, aboard the ISS. An article with links to a video of the contact is posted at: <https://tinyurl.com/ANS-300-ISS-WestPoint>
- + A new groups.io announcement from the ARRL describes new on-line forums: <https://tinyurl.com/ANS-300-ARRL-Forums> You can join the Groups at: <https://groups.arrl.org/g/ARRL-Groups/subgroups>
- + The NFL inspires a satellite docking tool which teaches satellites to interact and dock in space, an Aerospace team found a possible solution on Sunday Night Football™: <https://aerospace.org/article/nfl-inspires-satellite-docking-tool>
- + The ESA web pages presented with a new look this week: <https://tinyurl.com/ANS-300-ESA-New-Look> and, now you can tune in to ESA's latest digital channel: ESA Web TV! This is ESA's one-stop-shop for all live events from launches to lectures: http://www.esa.int/About_Us/Corporate_news/Presenting_ESA_Web_TV
- + Will We Survive Mars? A video series from Vox gives us something to think about: <https://youtu.be/x8fpeVICeGg>
- + This video describes how to set up ham radio software on the Raspberry Pi: <https://youtu.be/cGlfv-aPKU8>
- + Follow a project to use a RaspberryPi to sync your windshield wipers to music; this is apparently a work in progress: <https://tinyurl.com/ANS-300-Wipers-With-A-Beat>
- + AMSAT-SA Space Symposium 2020 in South Africa is planned for July 18, 2020. The theme will be: Amateur Radio in Space – exploring VHF, UHF and Microwaves. The latest information will be posted at: <http://www.amsatsa.org.za/> Kletskous related PowerPoint presentations can be accessed at the same web page include:
 - Kletskous
 - Kletskous Transponder
 - Kletskous Magnetic Stabilisation
- + Scientists and engineers from nearly a dozen Polish universities have teamed up with Poland-based satellite company SatRevolution and Sir Richard Branson's small satellite launch company Virgin Orbit to establish a new consortium to design and carry out the world's first dedicated commercial small satellite mission to Mars. See: <https://tinyurl.com/ANS-300-SatRevolution>
- + The nearest galaxy, Andromeda, is headed toward our Milky Way galaxy at 110 km per second (68 miles/sec). It'll look bigger & bigger in our skies before colliding with us in a few billion years, and when that happens, the two galaxies will be ripped across space by tidal forces. Have a nice day ... <https://twitter.com/physicsJ/status/1182628766289297408?s=20>

[ANS thanks everyone for the above information]

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In addition to regular membership, AMSAT offers membership in the President's Club. Members of the President's Club, as sustaining donors to AMSAT Project Funds, will be eligible to receive additional benefits. Application forms are available from the AMSAT

Office.

Primary and secondary school students are eligible for membership at one-half the standard yearly rate. Post-secondary school students enrolled in at least half time status shall be eligible for the student rate for a maximum of 6 post-secondary years in this status. Contact Martha at the AMSAT Office for additional student membership information.

73 and remember to behave and to help keep amateur radio in space,
This week's ANS Editor,
JoAnne Maenpaa, K9JKM
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